Creative Thinking for Individuals and Teams

An essay on creative thinking for military professionals

COL Charles D. Allen   U.S. Army War College

Leadership at all levels is involved with tackling existing problems and anticipating those that may emerge to pose a threat to the organization and the attainment of its goals. Rarely are those problems identical; most issues facing strategic leaders require novel approaches. Consequently, solutions to tough problems require creativity and innovation from members of an organization if it is to adapt and thrive in a competitive landscape. The greater challenge for leaders that extends beyond individual problem solving is the development of *organizations* that have the capacity to adapt to accelerated change and the unpredictability of the future. Such an activity (to improve the ability to shape and interact successfully with the external environment) has been touted as characteristic of a learning organization. In *The Fifth Discipline*, Peter Senge defines a learning organization as one that "is continually expanding its capacity to create its future."[1]

A commonly used definition of creativity is the ability to produce novel ideas that are valued by others. Because of the need to provide new and effective approaches to challenges, creativity is required of individuals, groups, and organizations at the tactical, operational, and strategic levels. There is also an interaction that occurs between the external environment and organization that is facilitated by creative thinking. The national security and contemporary operating environments have been characterized as volatile, uncertain, complex and ambiguous (VUCA).[2] Operating effectively in this context requires that leaders have the cognitive skills to match the multiple demands of such an environment. In the first core course in the United States Army War College (USAWC) curriculum, we assert that there are five domains of strategic thinking that are important: Creative Thinking, Critical Thinking, Thinking in Time, Ethical Reasoning, and System Thinking. We believe that providing students with the fundamentals of how to think about the challenges at the strategic level is essential because of the unpredictability of the environment, both internal and external. Consequently, our senior leadership must be skilled in developing and applying creative strategies to circumstances about which we have limited current knowledge or understanding. Therefore, creative thinking is a critical element of strategic thought and is necessary for successful leadership of our military.

This essay begins the examination of student roles as individuals and as members of groups during the year at the U.S. Army War College. We expect students to apply creative and critical thinking skills to the myriad of scenarios that they will face in the academic year. Through a short presentation of concepts that addresses individual creativity and group dynamics, we hope to increase awareness of how individual preferences and creative style may help or hinder contributions to group efforts. We will also review functions that are characteristic of effective groups and processes that support group creativity and innovation. The goal is to enhance learning

1

and increase effectiveness as strategic thinkers during this year and beyond. To that end, the development of organizational culture that fosters creativity and innovation will also be addressed.

Throughout this course, we operate under the premise that the individual attributes and skills that Army War College students possess have served them well in past assignments and will also be valuable in the future. But, we caution the students to remember that they are now at the position where those skills may be insufficient. The attainment of new skills and competencies, specifically in individual creativity and maintaining a creative climate, are required for success at the senior levels of our institutions.

We hold the following assumptions:

- Everyone is creative
- Everyone is motivated to become more creative in response to changing conditions
- There are processes that can improve individual and group creativity
- Creativity is absolutely essential for effective individuals and organizations.

Barriers to Creativity

Given that creativity and innovation is so desired, why is it that they seem to be such rare commodities? Roger Von Oech tells us there are several attitudes that serve as barriers to creativity that he labels as "mental locks." [3] These attitudes are mostly developed through social interaction with others and the requirements to fill the "role" we have been assigned. To fulfill our need to belong, we choose not to be different so practicality and conformity take precedent. As adults, we marvel at the creativity exhibited by children, but within our education system, we stress "rational", linear, and standardized approaches that

provide rules for everything. We emphasize that problem solving is serious business and thus requires somber efforts. We seek to minimize deviations and error by following set procedures in the quest for the optimal "right" answer. Wrong or just-good-enough solutions are viewed with disdain. In his, *A Whole New Mind,* Dan Pink asserts that this predominantly left-brain thinking (rational, systemic, and predictable patterns), characteristic of the United States in the 20th Century, will no longer be sufficient in the next century. [4] We also have become victims of our own achievements as individuals and within organizations so we default to ways of thinking and acting that have made us successful in the past.

Some who have studied military innovation suggest that the culture of the United States military over the last half-century reflects these same attitudes and that the Army is not a learning organization. [5] The military's use of standard operating procedures (SOPs), regulations, and doctrine are designed to provide control over how people and organizations behave without tolerating departures from the "tried and true." Military training programs often follow very structured programs of instruction (POIs) to teach specific knowledge and competencies—what to think and how to react to situations.

Other observers further assert that the Army personnel selection and promotion process results in a senior leadership that is limited in their ability to think or act "out-of-the-box." Consider the fact that over 70% of US Army War College students have a Myers Briggs Type Indicator profile of STJ. This is in contrast with the profile types where creative individuals tend to be more intuitive ("N") rather than sensory ("S"), more thinking ("T") rather than feeling ("F"), and more perceiving ("P") rather than judging ("J"). While the MBTI type profile is not predictive in all situations,

it does inform how most senior Army leaders *prefer* to act in stressful conditions.

The following sections of this essay will address the three factors that impact creativity—the individual, the process, and group climate.

Individual preferences and creative style

Creativity is the ability to develop new ideas and concepts that are effective in resolving situations at hand. You may have noticed that I did not say "solve a problem." Creativity is as much about observing both the internal and external environment and finding problems as it is about problem solving. Particularly at the strategic level, we must be sensitive to how we even *define* problems since very often, the specificity or breadth of the problem statement will limit the generation of viable solutions. The terms of "novelty", "quality", and "appropriateness" are commonly used in definitions of creativity.

Creative Thinking is a cognitive process that supports divergent and convergent aspects of problem-solving and decision-making. Thinking creatively provides a means to identify that a problem exists and, therefore, helps with problem definition. It also gives rise to the generation of multiple alternatives and a range of options in this divergent component. Through the application of critical thinking, the alternatives are analyzed and judged for effectiveness and appropriateness in solving the problem. The convergence on the problem solution results in a decision for implementation.

Research on creativity has revealed many attributes and competencies that are recurrent in individuals and organizations that are generally held as innovators. Diane Halpern in her book, *Thought and Knowledge*, presents the following as key elements of creative thinking: [6]

- Stretching and rejecting paradigms:
- Problem finding
- Selecting relevant information
- Generation, exploration, and evaluation
- Insight and incubation
- Analogical thinking (lateral versus vertical)

To provide an illustration of our stated assumptions and the key elements of creativity, we engage students in a thought exercise whereby a simple task is presented. One such exercise is to provide each student with a standard sheet of paper, a paper clip, and a length of tape. The task instructions are to develop a system to project the paper the furthest distance down a hallway. The students are given ten minutes to complete the task and may not ask the instructor any questions. At the end of the allotted time, students demonstrate their systems. A typical solution is creating a ball of paper around the paper clip using the tape on the outside and throwing it like a baseball. Another common solution is folding the paper into a traditional paper airplane with the paper clip attached with tape. While both of these methods are effective ways to project the items, some students derive more innovative and curious systems that greatly exceed the projection distances of the "in-the-box" solutions. After the completion of the exercise, the seminar conducts an after-action review to explore how they as individuals interpreted and went about the task. Other exercises are just as effective in demonstrating the individual barriers to creativity.

The exercises also serve to reveal personal factors related to creativity that are posited by Teresa Amabile in *Creativity in Context*.[7] The Amabile model of creativity presents a framework composed of task motivation, domain-relevant skills, and creativity-relevant processes. USAWC

students display a high degree of motivation to complete the task whether based on the competitive nature of the individual or just a desire to fulfill the expectations of the instructor. The breadth of knowledge and experience base is another important factor in the type of solution presented. The more innovative solutions seem to be extracted from other domains. The ambiguity with the instructions and the inability to ask questions can be frustrating for some, but for others, it opens the door of possibilities. However, under these conditions, there is an opportunity to be foolish, have fun and take risk in a non-threatening environment.

Throughout their careers, U.S. military officers have undergone a number of assessments that were intended to increase self-awareness and identify areas of strength and those areas for improvement. Our students have the opportunity to participate in the USAWC Leader Feedback Program (LFP) where they are administered a series of personality and behavioral assessments in a number of areas that we hold are important for success at the levels of senior leadership. Participants receive individual counseling through our leader feedback program later as part of the complementary academic programs. There are three assessment tools that are particularly important for self-awareness and are related to creativity. Many students may already be familiar with the Myers-Briggs Type Indicator (MBTI) from prior experiences. Students also take the Kirton Adaption-Innovation (KAI) instrument early in the year along with the Team Roles assessment as part of the Leader Feedback Program (LFP). The first two of these tools measure personality preferences; the third assesses behavioral implications of personality.

The MBTI has four factors that help describe an individual's creative style, 1) where you draw your energy, 2) how you gather information about the world, 3) how you prefer to make decisions, and 4) how you organize your life.[8] The War College offers a very informative and entertaining lecture by a noted MBTI expert that illustrates the profile archetypes, but more importantly, it provides insights on how individuals approach creativity. The stereotypical USAWC student with an ESTJ or ISTJ profile, (typically, 70-80% of War College students have these four-letter profiles) may feel that he is not that creative, but, rather, an *efficient* problem solver.

Kroeger presents the "Z-Problem Solving Model" (Figure 1) suggesting that individuals in groups can use their multiple profiles to effectively solve problems.[9] The Sensors of the group look at facts and details. The Intuitives can employ their imagination to brainstorm various alternatives. The Thinkers excel at objective analysis and consideration of consequences. In conjunction, the Feelers can evaluate with their unique insight how the proposed solution may affect others. In the end, all of these preferences bring a unique and valuable perspective to the problem-solving process.
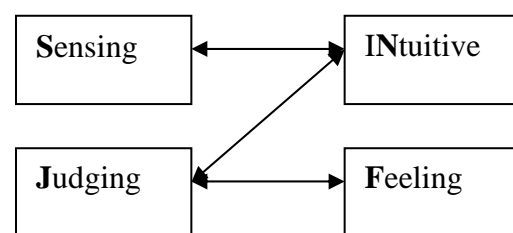

Figure 1

The KAI examines the manner in which creativity is expressed. While it is not a measure of how creative a person is, it does indicate preference for a particular creative style. Kirton through substantial research identified a continuum of focus for individual creativity.[10] On one end is the

development of options based on adaptation of existing information and ideas. On the other end is the generation of original and novel ideas.

Figure 2

Adaptors tend to focus on the "tried and true" to arrive at efficient solutions to problems. Their approach tends to be more evolutionary where the options are less disruptive, easier to accept and thus easier to implement, and where ideas are refinements of existing paradigms. Innovators, however, are those that come up with the out-of-the-box ideas that can often be counter to the prevailing culture. Their approaches to problems tend to result in many solutions that may require more time and resources to implement because of their revolutionary perspective. The innovators build new paradigms much to the discomfort of others who find reassurance with familiar procedures and rules.

While people often work effectively outside of their preferences, it is easy to imagine that preferences, whether measured by MBTI or KAI, have implications for how individuals approach creativity. Introverts may have a hard time brainstorming in a group setting. SJs may focus on collecting data from reliable sources and then making lists of solution sets. Kirton's Innovators may tend to start with a blank sheet of paper and re-define the problem. In any case, there are strengths for each profile and areas for improvement that can enhance creativity. Specific techniques are presented by Halpern to further develop individual creative skills.[11]

Individual and team roles

To overcome some of the barriers to creativity that individuals naturally possess, Von Oech presents four roles—Explorer, Artist, Judge, and Warrior as essential for developing, selecting, and implementing creative solutions to problems.[12] Individuals must consciously assume these roles as appropriate and address the obstacles of personal preferences. The Explorer is a seeker of information from several sources, always on the look out for something new and interesting. It is this role that collects information, asks questions, and is always on the prowl. The Artist is the creator that is able to piece together existing ideas in new combinations or to generate new ideas. The Artist is the experimenter who is willing to try out concepts, is willing to fail, and is willing to try again in order to learn from the experience. The Judge applies analysis and evaluation to the ideas in order to decide which problem solution to pursue. This is a role for which many of us have been trained and quickly move to—gather the data, assess, decide quickly, and then act is our model of a military leader. But it is also the *third* step in the process–one challenge for successful strategic leaders is to devote time to the specific consideration of the first two roles. The Warrior is the implementer of the solution. Through perseverance, passion, and the influence of others, the Warrior is able to follow a plan through to its fruition. This role is the one that military members are the most comfortable with—the focus is directed toward accomplishing the mission and overcoming any and all obstacles. In order to be effective creative problem solvers, the mantels of each of these four roles should be worn.

Other authors present various categories of roles in support creative thinking that use similar concepts. Noted creativity scholar, Edward DeBono described six thinking hats as a method for addressing and creatively

solving problems.[13] He suggests the use of parallel thinking represented by the hats provides a disciplined approach to addressing problems and results in more effective solutions. Tom Kelley's study of the leading innovation company, IDEO, observed ten "faces" or roles that its members perform that have led to the phenomenal success of that company.[14] It is beyond the scope of this article to provide a detailed description of the symbols used by Bono and Kelley. However, in each case the roles, hats and faces provide a framework for examining a situation from a variety of viewpoints. In so doing, the use of a framework can foster collaboration among individuals, increase productivity of groups, and increase creativity and innovation within organizations.

One of the instruments of the LFP asked students to describe how they have functioned in the past within a team or group setting. Belbin identified eight team roles or functions that should be accomplished for effective team performance.[15] The functions that members fulfill within groups are listed below with short descriptors:

Generate and provide new ideas (innovative, with a vision for the future; creative)

Serve as a catalyst for group action (inquisitive, extroverted; like to build on the ideas of others)

Be practical (reliable and conservative; realist that gets work done)

Be the driving force (dominant, authoritative, decisive; driving toward objectives)

Be supportive of group members (sympathetic, considerate; draw upon the best from others)

Consult with others (even-tempered team players)

Be a critical judge (calm critic; source of quality control), and

Detail type (meticulous with detail, orderly, possibly compulsive)

One has probably noticed that some of the attributes from the MBTI and the KAI are used to describe the contribution of individuals to team efforts. Kirton's Innovator is important for providing new ideas for the team to consider while the adaptor attempts to modify existing processes to solve novel problems. The MBTI Extrovert provides the spark that serves as the catalyst for team action. Von Oech's Warrior is decisive and pushes the team to accomplish its goals. The MBTI Feeler is aware of the importance of interpersonal relationships and can help Von Oech's Judge in selecting a solution.

The point is that individual preferences affect the roles that we prefer within groups so we should be aware of the potential impact. Awareness also informs us that we may have to assume certain roles even though they may be out of our comfort zone in order to support team creativity and performance.

Processes for group creativity

Research by Taggar identified specific individual factors that are important in determining group creativity.[16] The premise is that individuals with their personality preferences and abilities can behave in a manner that contributes to the creativity of the group when the appropriate team processes are in place. There are three main categories that seem to influence group creativity: task motivation, creativity-

relevant processes, and team creativity-relevant processes.

Task motivation focuses on two areas: commitment of individual members to the team, and focus of the members on the task at hand. Motivated members accept the goals and norms of the team and direct their energies to accomplishing the task.

There are certain processes at the individual level that reflect the behavior of group members and that are relevant to generating creative ideas. Taggar referred to these as **creativity-relevant processes**. These are:

- Individual preparation
- Openness to new ideas and the
- Synthesis of the ideas of the team,
- Establishing personal goals
- Development of a strategy to achieve the team goals, and
- Active participation by individual members of the teams.

As we saw in Belbin's team roles, individual behaviors must align with the required functions for effective group performance.

There are also several processes that are important for generating ideas and solving problems. Taggar designated these as **team creativity-relevant processes** where the interactions among the team's members support the application of individual creative resources and result in creative group performance:

- Team Citizenship
- Performance Management
- Effective Communication
- Involving Others
- Providing Feedback
- Conflict Management

The main processes for effective and innovative groups involve communication of goals and expected behaviors, coordination of the activities and contributions of members, and the handling of conflict.

Consider the following. In a problem-solving team, there are two fundamental challenges: managing the team and solving the problem. If leaders fail to understand the individual and team processes involved, they will never get past focusing efforts on the team dynamics. Understanding and managing the team is a prerequisite for the team's ability to most effectively solve the problem.

There must be a process to allow for effective communication that allows for other members to contribute ideas, to listen to the ideas of others, and to maintain supportive relationships within the team. Individuals must feel that they are contributing members of the team and are therefore valued citizens. There must be a mechanism to monitor the performance of the task and the adherence to established milestones.

Given the interdependent nature of groups, there must be coordination among the members of the team that ensures the involvement of others and encourages input from all members of the team. There should also be a shared responsibility of providing feedback to others. This feedback should be both positive and negative in order to provide a critical assessment of ideas. We see that high-performing groups are self-monitoring—they actively seek information about their performance and undertake their own actions to better achieve team goals.

Another important process is the handling of conflict. Members must appropriately react to conflict and be willing to address conflict when necessary. They must understand that some degree of conflict is helpful, but should also be aware of how to avoid potentially disruptive conflict.

In summary, Taggar's research found that there is a relationship between

individual attributes, the behavior of individuals within groups, and the creativity of groups. What we see is that given the abilities and skills of individual members, the effective use of the specific processes will support group creativity. Individuals that function as viable members of the group can contribute creative ideas in conjunction with and in support of others. They must prepare for the task and feel like citizens who have responsibilities to the group. They must be willing to listen to and synthesize the ideas of others. They must have set goals that they are motivated to attain and they must participate in the creative endeavors. When individuals function as members of a team, we find that Taggar's processes are helpful in supporting creativity. When groups consciously think about and apply these processes, they tend to be more creative and innovative.

Organizational Culture and Innovation

Thus far, we have explored the influence of individual preferences on creativity, considered the roles that are important to addressing problems, and examined some processes that are helpful in developing creativity of individuals and of groups. The individual, the process, and the group atmosphere must all operate within the organizational context. So finally, we will address the importance of leadership in establishing an organizational culture that supports the creativity of its members.

As organizations emerge and evolve, certain structures and procedures become accepted as standard practices and responses to environmental challenges. The organizational paradigms or mental models become set as in concrete and are even taught to new members as the "correct" way to think and act on challenges. The well-developed patterns of responses are difficult to break and are used to handle problems in the same old way. It is easy to see how individual creativity is naturally stifled in organizations.

The challenge comes when the standard response is applied to non-standard problems in a complex and ambiguous environment and is, predictably, found to provide an ineffective solution. Solution sets that were optimal or good enough in previous settings become inadequate in the new context and thus, require a new and different approach. Organizational learning occurs when the barriers to creativity are reduced, members of the organization are encouraged to be creative, and the organizational culture supports innovation.

As we have seen over the history of the U.S. military, necessity and crisis has been the mother of innovation for our forces in the field. U.S. Army War College researcher Leonard Wong provides several examples in his monograph of the creativity and innovation exhibited by junior officers in operations conducted in support of the global war on terrorism.[17] His concern is that once these officers return to the functional Army their innovativeness that served them so well in demanding and dangerous environments will be stifled.

The Army as an institution is seeking to develop a culture that can benefit from creativity at the level of individuals, groups, and agencies. In the article "Adapt or Die," the Army's institutional barriers to creativity are discussed that reflect the concepts addressed earlier in this paper.[18] The authors from the Training and Doctrine Command (TRADOC) Futures Center sound a clarion call to stress the imperative to develop and sustain a culture of innovation within the ranks through the encouragement of innovative behaviors throughout the organization. The goal is to attain a culture of innovation that promotes and rewards experimentation, feedback, learning, and renewal so that the Army becomes truly a learning organization.

8

Conclusion

So what does this have to do with our students, creativity, and leadership? Personal skills and preferences will influence creative style. The MBTI and KAI assessments should not be a surprise—the data comes from person completing the instrument. The same applies to the Team Roles assessment that students receive with their LFP counseling. The assessments provide a self-awareness of their comfort zones and how they prefer to behave in groups. We suggest that students use that information to manage themselves and other members of the seminar.

During the course of this year and beyond, students will be members of groups that will be presented with situations ranging from trivial to just plain hard (VUCA will reign). Students are encouraged to work on developing relevant skills and overcoming personal barriers to creativity so that they will be contributing members of the groups. That may mean assuming some of the functions required for effective teams. The self-awareness gained through the MBTI and KAI assessments combined with the roles identified by Belbin and Von Oech can support creative pursuits as an individual and as a member of a team.

In the event that a student becomes the group leader, she should be aware that each individual member has a creative potential that can contribute to group success. The leader should ensure that the team functions are covered by its members and that the atmosphere within the group supports creativity. The larger issue is that as a senior leader in future assignments, the student will have a professional responsibility to develop innovative, ethical teams and organizations. Success will belong to those who are agile and adaptive to the strategic landscape.

The processes that Taggar identified should help to monitor and manage the interactions of team members as well as those within organizations. Building an organization that is able to realize the creative potential of its individuals through their engagement with other members can result in an awesome product. This is the ultimate challenge faced by not only our students, but also our Army.

I will close with a comment by Pulitzer Prize winner, Thomas Friedman, "the most important attribute you can have is creative imagination—the ability to be first on your block to figure out how all these enabling tools can be put together in new and exciting ways…. That has always been America's strength."[19]

Endnotes

[1] Peter M. Senge, *The Fifth Discipline* (New York: Doubleday, 1990), 14.

[2] Stephen A Shambach, editor, "The Strategic Environment," in Strategic Leadership Primer. Second Edition. (Carlisle Barracks, PA: U.S. Army War College, 2004), 12-14.

[3] Roger Von Oech, *A Whack on the Side of the Head.* Third edition. (New York, NY: Warner Books, 1998), 14-15.

[4] Daniel Pink, *A Whole New Mind* (New York: Riverhead Books, 2005), 28-30.

[5] John A. Nagl, *Learning to Eat Soup with a Knife* (Chicago: University of Chicago Press, 2005), 205-208.

[6] Diane F. Halpern, "Creative Thinking" in *Thought & Knowledge: An Introduction to Critical Thinking* (Mahway, New Jersey: Lawrence Erlbaum Associates, 2003), 396–429.

[7] Teresa M. Amabile*, Creativity in Context: Update to the Social Psychology of Creativity* (Boulder, CO: Westview Press, 1996), 93-95.

[8] Otto Kroeger, Janet M. Thuesen, and Hile Rutledge, *Type Talk at Work: How the personality types determine your success on the job* (New York: Dell Publishing, 2002), 27-28.

[9] Ibid., 130.

[10] Michael J. Kirton, *Adaption-Innovation in the Context of Diversity and Change* (New York: Routledge, 2003).

[11] Halpern, 416-425.

[12] Roger Von Oech, *A Kick in the Seat of the Pants* (New York, NY: Harper and Row, 1986) 11-21.

[13] Edward DeBono, *Six Thinking Hats* (New York: Bay Books, 1999).

[14] Tom, Kelley and John Littman, *The Ten Faces of Innovation* (New York: Doubleday, 2005).

[15] R. M Belbin, Team roles and a self-perception inventory. In *The Effective Manager: Perspectives and Illustrations*, ed. Jon Billsberry (London: Open University Press, 1996).

[16] Simon Taggar, Individual Creativity and Group Ability to Utilize Individual Creativity Resources: A Multilevel Model. *Academy of Management Journal*, 2002, Vol. 45, No. 2: 315-330.

[17] Leonard Wong, Stifling Innovation: Developing Tomorrow's Leaders Today. (Carlisle PA: U.S. Army War College, Strategic Studies Institute, April 2002).

[18] BG David A. Fastabend and Mr. Robert H. Simpson, "Adapt or Die: The Imperative for a Culture of Innovation in the United States Army," *Army Magazine*, February 2004, 20.

[19] Thomas L. Friedman, *The World is Flat: A Brief History of the Twenty-First Century.* (New York: Farrar, Straus, and Giroux, 2005), 469.